Procedure

Procedure Number: SNS-TS-P06
Date: 10 August 2000
Revision: Rev. 0
Title: Design Verification Process

Copies: This document is available on the SNS web site. If you are working with a copy, you should periodically verify that it is the current revision number.

Purpose

This procedure defines the process and rules for verifying the design is technically adequate and that the resulting system, structure, or component will be fit for its intended purpose. This procedure implements parts of SNS-QA-P01 ("Design").

Scope

This procedure is the preferred process for the verification of designs for Target Systems Work Breakdown Structure (WBS) 1.6.

Responsibilities

- Senior Team Leader (STL): Approves the verification process.
- Lead Engineer (LE): 1) Directs the design verification; 2) provides guidance and reviews the verification to assure conformance with requirements, and consistency; 3) resolves interface problems.
- WBS Level 3 Task Leader: 1) Coordinates the design verification process for the particular WBS level; 2) determines grade level of system, structure, activity, or process with assistance from QA Representative; 3) Assures that the design is properly prepared by the appropriate discipline engineers and designers for the particular Work Breakdown Structure (WBS); 4) ensures that the verifier/checker is technically competent to review the design.
- Engineering Designer (ED): 1) Prepares design; 2) ensures that any software used for design has been verified for accuracy and used properly; 3) ensures that design is sufficiently detailed as to purpose, methods, assumptions, design input, references, and units so that a person technically qualified in this subject can review and understand the documentation and verify the adequacy of the results; 4) assures that design is documented to the appropriate degree of detail.
- Verifier/Checker: 1) Not involved with the development of the design; 2) reviews the design to a degree proportional to the consequence of failure of the system, structure, or component under consideration, and the appropriate Grade Level (SNS-QA-P01).

Definition

Design Verification methods include 1) design review; 2) alternate calculation, or; 3) qualification testing.

References

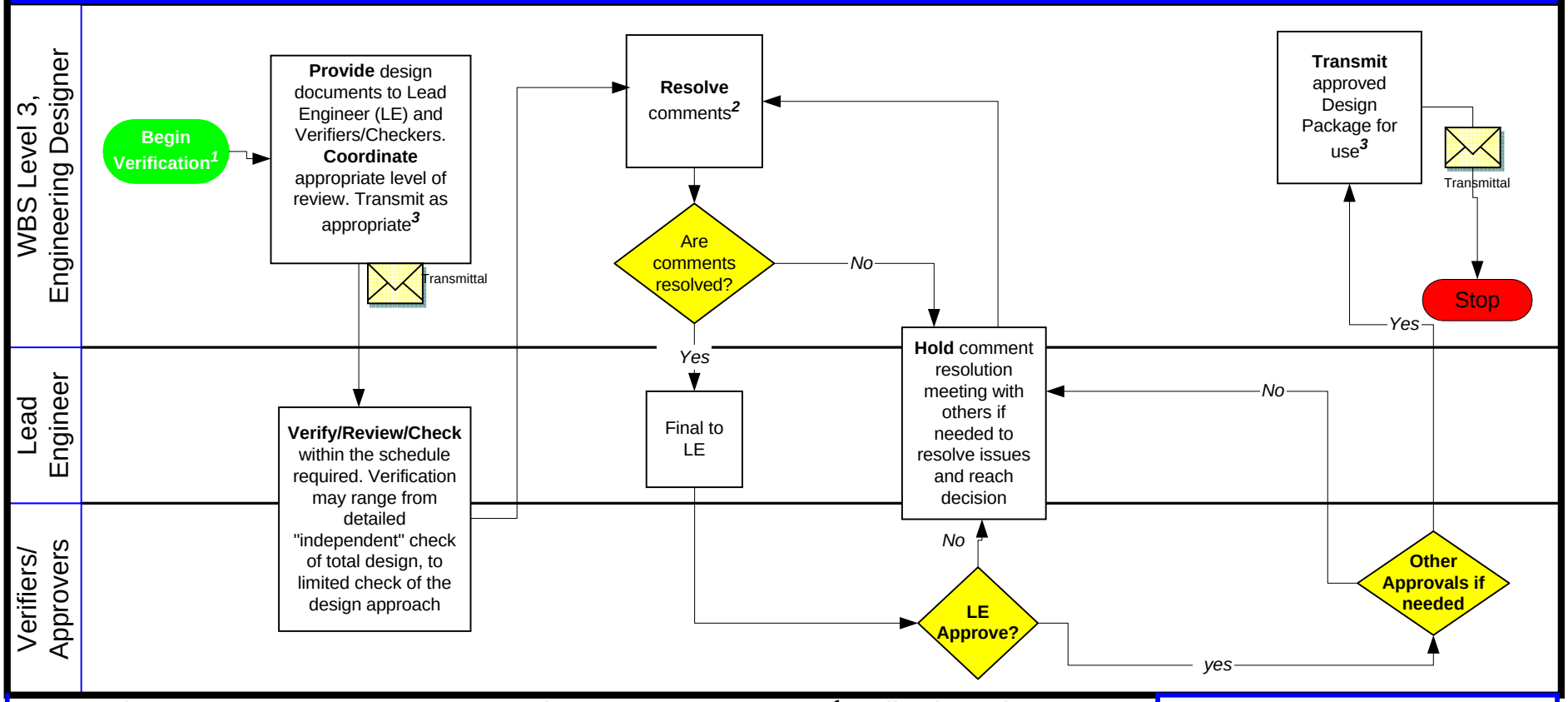
1. SNS-QA-P01, SNS Quality Assurance Plan
2. SOP-ENG-04, Design Verification (Guide)
3. Preliminary Safety Analysis Report (PSAR)
4. SNS-TS-P07, Drawing Preparation/Control Process
5. SNS-MS-P01, Design Review Procedure

Appendix

A. Design Verification Process

Prepared By: *_Original Signed By W.E. Palmer_* **Approved By**: *Original Signed By T.A. Gabriel_*
QA Representative **Senior Team Leader**

Appendix A
Design Verification Process



Key Elements

a. Standards (ASME, ASTM, IEEE, etc.)
b. Change Control Level
c. Alternate Calculations
d. Qualification Testing
e. Confirm QV Decal (SNS-TS-G002)
f. Squad Check (When Required)
g. "Independent" Design Review Required?
   1. Outside design agency (Safety Class)
   2. Inside but another department
   3. Inside same department

Key Reviewers

- Lead Engineer
- ES&H
- Related Interfaces (AE/CM)
- QAR
- Other Reviewers/Verifiers
- AE/CM Construction Field Eng. (TII)

[1]Grading (SNS-7)

Record

- Confirm Assigned Grade w/QAR
- Narrow to Component Level When Feasible
- Grading Determines Level of Review/Verification Required

[2]**Maintain** comments in project working files. Retention to be determined by DCC Records Plan.

[3]L-3 and LE will determine whether formal transmittal is required.

Record of Use (Optional)

This procedure was followed to produce the following:

_____ _____ _____

Document or Item ID Signature Date